Determination of Public Land (Rangeland) Health for 64064 BROWN BROTHERS

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on the assessments, it is my determination that the public land within allotment #64064 Brown Brothers meets the Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard. There are no public land riparian areas on this allotment, therefore this standard was not addressed.

/s/ T. R. KREAGER	07/21/2004
Assistant Field Manager	Date

Standards of Public Land Health
Evaluation of 64064 BROWN BROTHERS Allotment
[02/23/2004]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within the Brown Brothers Allotment # #64064. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64064-3-1-F221	X			X			N/A		
64064-3-2-F222	X			X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for the public land on the Brown Brothers allotment #64064. Ten of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with quantitative information gathered from previous data collected on two trend plot locations within the allotment were utilized to make rangeland health determinations. Quantitative evaluations were performed by the Roswell Field office, which include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition. These collections are scheduled and conducted approximately every 5 years.

The dry condition occuring over the last several years has impacted this allotment and surrounding area. Pasture 3-1 with an acreage of 1,934 or approximately 806 hectares is a SD-3 shallow ecological site. The soil phase is a Lozier-Tencee complex which occurs mostly in the west-central part of the survey area on low, limestone and indurated caliche hills. Indicators assessed ranged from None to Slight to Moderate to Extreme.. Pedestals and terracettes rate at Moderate as there is some pedestaling occuring on rocks and the half-shrub species such as snakeweed (Gutierrezia sarothrae). Bareground rates at Moderate to Extreme with an estimation of 80%. The long-term average for bareground cover is 24%. However, even with the rock cover of 38% over the long-term coupled with the amount of bareground, this indicator exceeds the upper expected range for the ESD at 40-60% which is a wide range. Soil surface resistance to erosion rates at Moderate as soil surface resistance is reduced throughout. There has been some reduction in stabilizing agents such as organic matter. Plant cover changes have negatively affected

the infiltration rates as the grass cover and shrub component have been removed somewhat from the site due to a past herbicidal treatment to remove acacia (Acacia spp.) and creosote (Larrea tridentata). The site has not shown any positive effects from this treatment at the present time. The sediment loss from this upland site is of concern as the rock cover may be more due to the absence of grass species.

The functional/structural groups for this ecological site are not present. The absence of the grama (Bouteloua spp.) species along with the skunkbush (Rhus spp.) has compromised some of the wildlife browse component. About 20-30% of the vegetation is dead or decadent, mainly due to the treatment by herbicides. The key species now found is creosote, in small amounts. Litter amount now is estimated at only 10%. Most of the litter has been blown away by southwest winds. This indicator rates Moderate. Annual production is only 40% of the potential which is 500 lbs/ac or kg/ha and rates Moderate also. Invasive plants rate at Moderate as creosote, both live and dead is scattered throughout. On this shallow soil however, the obvious cut-off where the herbicide was applied ends just on the other side of the allotment boundary fence. Invasive plants rate Moderate with creosote (Larrea tridentata) scattered throughout.

Pasture 3-2 is a loamy site with a Reakor-Pecos association occurring in valleys between low hills and limestone areas. Slopes are 0-3%, but this site has more of a rolling aspect with slightly steeper slopes. This pasture with an ecological site of 728 acres/303 hectares is situated between a draingae and upland cattle use areas with watering points. There is evidence of trailing in the area. There are acacia and opuntia in the draw bottoms suggesting that the livestock use this area for shade and cover and move back and forth to water. Water flow patterns rate at Moderate as there is sheet flow coming off from the upland area causing progressive minor erosion with some instability and deposition. Pedestals and terracettes rate at Moderate as the tobosa (Pleuraphus mutica) has been elevated due to water flow and some flow patterns caused from trailing. The fragile nature of the soil may be due to the gyp inclusions where the troughs are located. Bareground approaches the upper end of the range expected and also rates Moderate. Gullies are uncommon with some vegetation stabilizing the bed and slopes. Some of the roads however may be leading to become a gully. Most of the other indicators with soil and hydrologic attributes rate at Slight to Moderate. Due to the trailing occurring to and from watering points, the compaction layer of 5-10% of the subsurface is slightly restricting water movement. Long-term data indicates the grass species such as black grama (Bouteloua eriopoda), burrograss (Scleropogon brevifolius) and ring muhly (Muhlenbergia torreya) have been reduced. Functional/structural groups rate at Slight to Moderate but tobosa remains dominant.

Litter amount rates Moderate as presently only 1/2 of the long-term average can be observed and this falls in the bottom end of the range expected. Annual production also rates Moderate with only 40% of potential at present. Invasive plants rated at Moderate also with cholla (Opuntia spinosa), prickly pear (Opuntia engelmannia) and acacia scatterd throughout. Reproductive capability of perennial plants is only slightly limited and there is an obvious lack of litter for a good mulch layer to protect the soil. The physical crusting is holding the soil in place but is broken in continuity in several spots.

The area has been impacted greatly from the drought and it will take a good precipitation in the growing part of the year to help this site recover. Pronghorn and muledeer do frequent the allotment, however, and use the draw bottoms for cover.

Wildlife - Evaluation of the integrity of the biotic community considered several indicators as attribute indices for the area of interest. Biotic indicators are interrelated with several other indicators, including soil/site stability, hydrologic function, and vegetation. Several indicators are singularly biotic and address the vegetative aspect of the ecological site description, such as functional/structural groups, annual production and invasive plants, as discussed above. In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation.

Pasture 3-1 - Specifically, four biotic indicators fell within the Moderate rating; soil surface resistanct to erosion, litter amount, annual production and invasive plants. Considering present climate regimes, the middle two indicators can be expected to fall within the normal range of variability. As the area of interest falls within an ecotone between the Chihuahuan desert and grasslands biome, desert shrub components can be expected in the area and would increase with declining range site conditions and overall drying conditions over time. In addition, the shallow rangesite tends to support more shrubby vegetation components, especially on hills. Past herbicide treatment of this rangesite to control creosote and catclaw acacia has not resulted in an increase of other herbaceous vegetation, e.g., grasses and forbs.

Wildlife Habitat and Population indicators rate Slight to Moderate, primarily for desert mule deer and upland game birds, and a variety of non-game terrestrial species. The composition of vegetation reflects current climatic conditions, e.g., drought for the past several years, the area being within an ecotone of the Chihuahuan desert and grasslands, and current and past use. Range site production and cover of a variety of preferred plant species for wildlife, such as forbs and woody browse species, and the availability of seed for food and regeneration, is moderated by climate and, in this area, vegetative manipulation through herbicide treatment. It should be noted that as habitat conditions change, i.e., shift to desert shrub grasslands, an shift in wildlife species and populations will occur, with those species preferring a more shrubby component increasing and those requiring a more open grassland aspect declining. Current observed wildlife habitat conditions indicate room for improvement for existing species utilizing the area and an increase of those terrestrial species that may have once inhabited a more desert grassland aspect of the area. Improvement include increasing ground cover and decreasing erosion, thereby reversing the static to downward trend in range condition. With respect to Special Status Species, none are known to occur in the area of interest at this time and the Habitat and Population indicators are, therefore, rated None to Slight.

Pasture 3-2 - Specifically, three biotic indicators fell within the Moderate rating; litter amount, annual production and invasive plants. Considering present climate regimes, litter amount and annual production can be expected to fall within the normal range of variability. Invasive plants are primarily Opuntia spp., but not affecting the interrelated Functional/Structural Groups (an increase in one resulting a decrease in the other due to

some factors, including land use and climatic conditions). The range site has the potential to improve with more favorable climatic conditions, wetter periods coupled with proper land use. In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation.

Wildlife Habitat and Population indicators rate Slight to Moderate, primarily for desert mule deer, pronghorn antelope and a variety of non-game terrestrial species, including raptor species that may utilize the area due to adjacent habitat features such as draw bottoms. The composition of vegetation reflects current climatic conditions, e.g., drought for the past several years. Range site production and cover of a variety of preferred plant species for wildlife, such as forbs and woody browse species, and the availability of seed for food and regeneration, is moderated by climate and land use. With respect to Special Status Species, none are known to occur in the area of interest at this time and the Habitat and Population indicators are, therefore, rated None to Slight.

Hydrology - Pasture 3-1 - The pedestal indicator rated as moderate. The recent dry conditions in combination with wind and water erosion has possibly decreased the amount of plant cover and possibly decreased infiltration into the soils which may have increased the amount of pedestaling of plants and rocks. The bare ground indicator rated as moderate. The amount of bare ground has possibly increased due to recent dry conditions and also wind and water erosion processes. The plant community composition and distribution relative to infiltration and runoff rated as moderate. The recent dry conditions or drought conditions have possibly increased the amount of conversion of grassland to shrub land which has reduced infiltration and increased runoff. The increase of all species and class would help increase water infiltration and decrease runoff.The litter amount rated in the moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. All other indicators rated as none to slight or slight to moderate. Sand and gravel deposits of Quaternary Gravel deposits and limestone and gypsum deposits of the San Andres Formation outcrop in the area.

Pasture 3-2 - The water flow patterns indicator rated as moderate. Erosion is occurring with some instability and deposition. The pedestal indicator rated as moderate. The recent dry conditions in combination with wind and water erosion has possibly decreased the amount of plant cover and possibly decreased infiltration into the soils which may have increased the amount of pedestaling of plants and rocks. The bare ground indicator rated as moderate. The amount of bare ground has possibly increased due to recent dry conditions and also wind and water erosion processes. Soil surface resistance to erosion rated in the moderate category. Organic matter is lacking on this site, but this is expected for an area that has a small amount of litter present. The litter amount rated in the moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. All other indicators rated as none to slight or slight to moderate. Sand and gravel deposits of Quaternary alluvium deposits outcrop in the area.

It is the professional opinion of the Assessment Team that the public land within the Brown Brothers allotment #64064 meets the Upland and Biotic standards. See recommendations and site notes for further information regarding this allotment.

Recommendations: Monitoring should continue on a regular basis for both sites on this allotment. The brush treatment should be re-evaluated to determine the longer term effectiveness. The shallow soil on the treatment has not yet revegetated with desirable plants. The rock cover and lack of vegetation on the treated area will predominate until a period of wet years gives the pasture a chance to establish itself. Deferment of livestock could help, but favorable climatic conditions would expedite site recovery.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64064-3-1-F221			
Legal Land Desc	NWNW 27 0120S 0220E Meridian 23	Acreage	1934
Ecosite	042CY025NM SHALLOW SD-3	Photo Taken	Y
Watershed	13060008090 HONDO		
Observers	NAVARRO/BAGGAO	Observation Date	02/23/2004
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Lt	Soil Taxon Name	LOZIER
Texture Class	NM666 GRV-L	Soil Phase	LOZIER-TENCEE
Texture Modifier	NM666 COBBLY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	7.92	NOAA Growing Season Precipitation	4.91
NOAA Avg Annual Precipitation	12.84	NOAA Avg Growing Season Precipitation	10.65
Disturbances and Animal Use:	There is a power-line and fence with a two-track paralleling it. Very little use at present. However the major disturbance by herbicidal treatment has taken browse and forage out of the upland.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills				X	
Comments:						
S H	Water Flow Patterns				X	
Comments:						

S H	Pedestals and/or Terracettes			X		
Comments:	Some occuring on rock and shrubs.					
S H	Bare Ground			X		
Comments:	Approaches upper end.					
S H	Gullies					X
Comments:	Non-existent.					
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	Most of soil is by wind.					
H	Litter Movement				X	
Comments:	Most has been moved by wind.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:	Treatment and dry conditions.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Most of the F/S groups were eliminated by the herbicidal treatment for creosote (Larrea tridentata).					
B	Plant Mortality/Decadence				X	
Comments:	Key species-creosote.					

H B	Litter Amount			X		
Comments:	Now at 10%.					
B	Annual Production			X		
Comments:	200 lbs/ac or kg/ha. is the estimate currently.					
B	Invasive Plants			X		
Comments:	Creosote is scattered and some decadence.					
B	Reproductive Capability of Perennial Plants				X	
Comments:	There are lots of rocks on this shallow site with wind exposure and treatment has taken out of visible cover.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crusts evident.					
B	Wildlife Habitat				X	
Comments:	A substantial amount of browse has been removed by herbicidal treatment.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to	Moderate	Slight to Moderat	None to

			Extreme		e	Slight
S	Soil	0	0	2	6	2
H	Hydrologic	0	0	4	5	2
B	Biotic	0	0	3	7	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	2	8
Hydrologic		0	4	7
Biotic		0	3	10

Site Notes: The most notable concern is the past herbicidal treatment for brush species. The area has been left with virtually no browse for wildlife. It will take a while longer for the grass species to return to acceptable levels. Long-term data show a significant amount of production as an average. There is only 1/3 remaining at best. Snakeweed (Gutierrezia sarothrae) has come into the site, but should leave as this half-shrub is cyclic in nature. There is a herd of pronghorn (Antilocapra americana) and muledeer (Odocoileus hemionus) inhabiting the vicinity, but are remaining in the draw bottoms and drainages where the treatment was not applied.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64064-3-2-F222			
Legal Land Desc	NWSW 35 0120S 0220E Meridian 23	Acreage	728
Ecosite	042CY007NM LOAMY SD-3	Photo Taken	Y
Watershed	13060007030 ZUBER		
Observers	NAVARRO/BAGGAO	Observation Date	02/23/2004
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	RH	Soil Taxon Name	REAKOR
Texture Class	NM666 L	Soil Phase	REAKOR-PECOS
Texture Modifier	NM666 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	7.87	NOAA Growing Season Precipitation	4.74
NOAA Avg Annual Precipitation	11.93	NOAA Avg Growing Season Precipitation	10.13
Disturbances and Animal Use:	Trailing is evident to and from dirt tanks and other feeding and watering points. There is an obvious array of two-track roads intersecting the site and these follow into the draw bottoms.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No steep slopes.					
S H	Water Flow Patterns			X		
Comments:	Sheet flow coming off.					

S H	Pedestals and/or Terracettes			X		
Comments:	In water flow patterns. Tobosa (Pleuraphis mutica) shows evidence of pedestaling especially on exposed slopes and flow paths. Some terracetting is present.					
S H	Bare Ground			X		
Comments:	Approaches upper end of the range expected.					
S H	Gullies				X	
Comments:	Uncommon but the roads intersecting the transect lines and access are beginning to show signs of erosion. Watering points have obvious trailing occuring.					
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	A few areas have been exposed to wind.					
H	Litter Movement				X	
Comments:	Wind has displaced the litter present.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Resistance has been reduced throughout the site.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some horizon especially the organic layer has been degraded.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	There has been a minor effect on infiltration.					
S H B	Compaction Layer				X	
Comments:	Trailing by livestock and roads has restricted some water movement into the soil.					
B	Functional/Structural Groups				X	
Comments:	Acacia (Acacia spp.) and prickly pear (Opuntia spp.) are gradually encroaching especially in the draw bottoms. Tobosa is not as abundant when comparing to the long-term data.					
B	Plant Mortality/Decadence				X	

Comments:	20% of vegetation is dead or decadent. Mostly it is the dry conditions which have contributed to the decadence of tobosa and other grass species.					
H B	Litter Amount			X		
Comments:	Now only 1/3 of the long-term average is present. An estimate of 10% was observed. There is an obvious lack of litter for a mulch layer.					
B	Annual Production			X		
Comments:	Now only 40% of potential.					
B	Invasive Plants			X		
Comments:	Prickly pear, cholla (Opuntia spinosa) and acacia are scattered throughout.					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crusts are evident but continuity is broken by trails and roads.					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	Pronghorn (Antilocapra americana) and muledeer (Odocoileus hemionus) can be seen.					
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

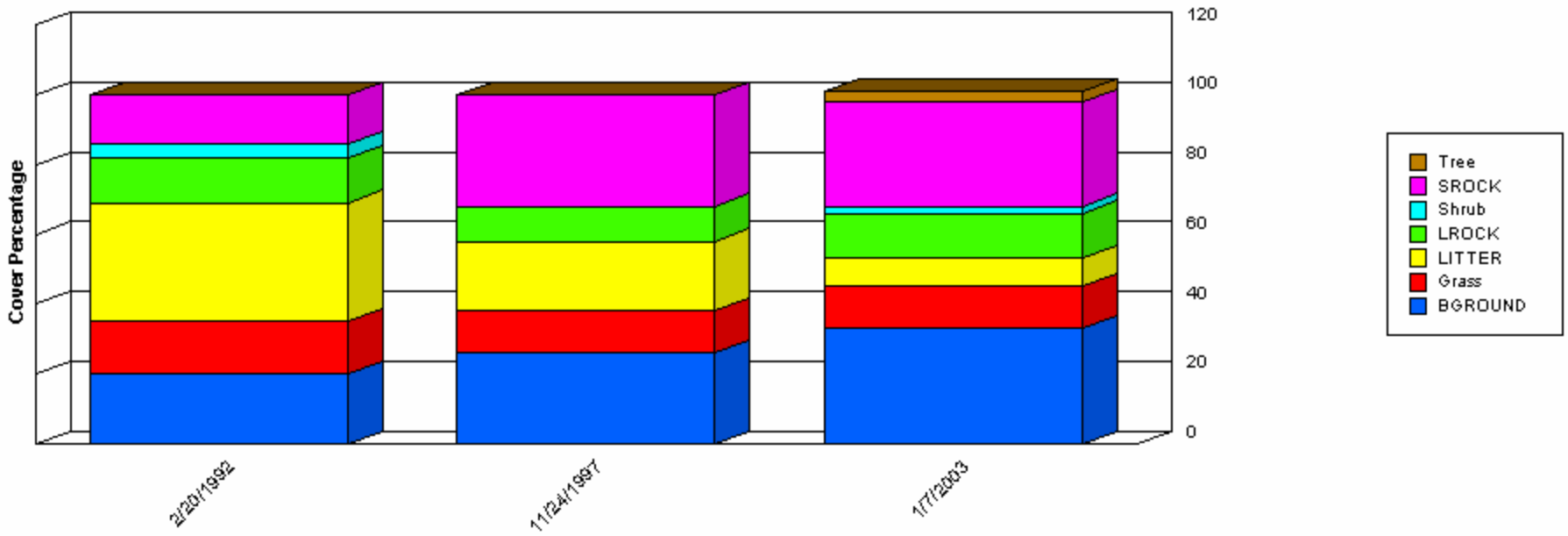
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	4	5	1
H	Hydrologic	0	0	5	5	1
B	Biotic	0	0	4	7	2

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	4	6
Hydrologic		0	5	6
Biotic		0	4	9

Site Notes: The site has been impacted by the dry conditions. The pedestaling of tobosa (Pleuraphis mutica) is the most notable feature. Acacia (Acacia spp.) and the prickly pear (Opuntia spp.) are gradually encroaching. However with favorable precipitation, the grass cover will again aid to preoect the site. This coupled with leaving livestock off the site will speed up the recovery. The healing over of the site is priority.

Ground Cover Trends



	2/20/1992	11/24/1997	1/7/2003
BGROUND	20.00	26.00	33.00
Grass	15.00	12.00	12.00
LITTER	34.00	20.00	8.00
LROCK	13.00	10.00	13.00
Shrub	4.00	0.00	2.00
SROCK	14.00	32.00	30.00
Tree	0.00	0.00	3.00

	2/20/1992	11/24/1997	1/7/2003
Total	100.00	100.00	101.00

Report Parameters

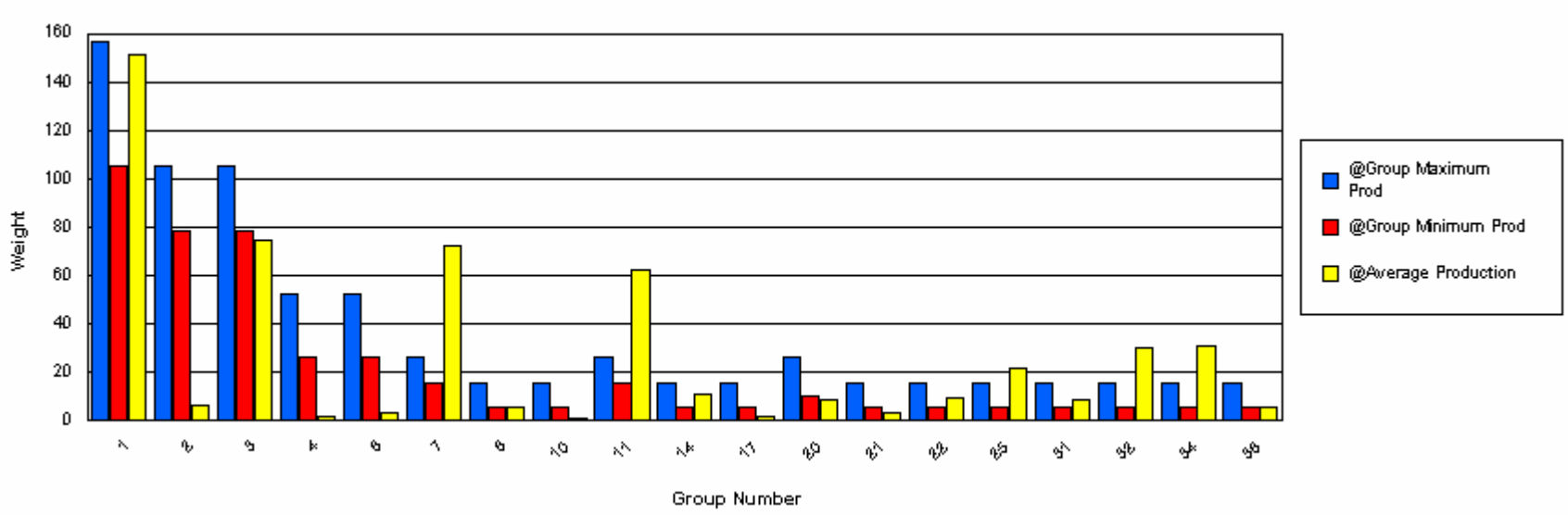
SITE NAME LIKE	64064-3-1-F221
ON/AFTER	01/01/1983
ON/BEFORE	12/31/2003

Functional / Structural Groups

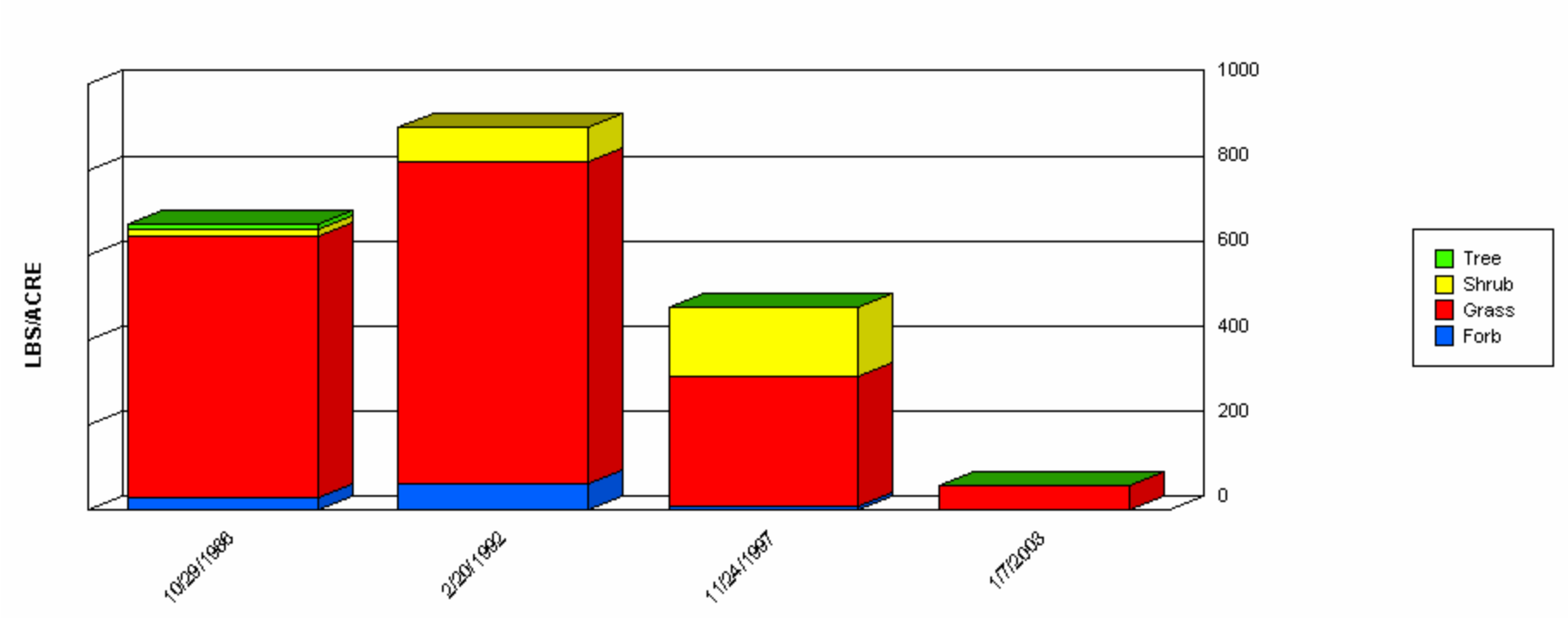
Report Parameters	
SITE NAME LIKE	64064-3-1-F221
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003
MIN LBS TO GRAPH	1
SELECTED ECOSITE	042CY025NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	105	157	14.00	359.00	151.20	125.48
2	Grass	BOCU	78	105	0.00	13.00	6.50	6.50
3	Grass	BOGR2	78	105	7.00	143.00	74.40	57.32
4	Grass	MUPO2	26	52	0.00	3.00	1.50	1.50
6	Grass	SPCR	26	52	0.00	10.00	3.00	4.12
7	Grass	TRMU	15	26	7.00	101.00	44.50	36.83
7	Grass	TRPI2	15	26	0.00	49.00	27.80	18.40
8	Grass	MUAR	5	15	0.00	13.00	5.00	4.95
10	Grass	ERPU8	5	15	0.00	3.00	1.00	1.22
11	Grass	ARIST	15	26	0.00	11.00	3.25	4.55
11	Grass	HIMU2	15	26	0.00	60.00	16.20	22.24
11	Grass	MUAR2	15	26	0.00	66.00	23.25	27.03
11	Grass	SCBR2	15	26	5.00	67.00	19.40	23.89
14	Grass	LYPH	5	15	0.00	19.00	7.00	8.52
14	Grass	MUTO2	5	15	0.00	9.00	2.50	3.77
14	Grass	PAHA	5	15	0.00	3.00	1.50	1.50
14	Grass	PANIC	5	15	0.00	0.00	0.00	0.00
17	Forb	SPHAE	5	15	0.00	4.00	1.33	1.89
20	Forb	CROTO	10	26	0.00	21.00	8.60	8.69
21	Forb	AAFF	5	15	0.00	7.00	3.25	2.59
21	Forb	DYPA	5	15	0.00	0.00	0.00	0.00
22	Forb	ERTE13	5	15	0.00	15.00	4.00	6.36
22	Forb	HOGL2	5	15	0.00	1.00	0.25	0.43
22	Forb	MELE2	5	15	0.00	4.00	1.25	1.64
22	Forb	PENA	5	15	0.00	0.00	0.00	0.00
22	Forb	PPFF	5	15	0.00	7.00	3.67	2.87

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
22	Forb	ZINNI	5	15	0.00	1.00	0.25	0.43
25	Shrub	LADI2	5	15	0.00	87.00	21.20	33.36
30	Tree	PRJU	10	26	0.00	1.00	0.33	0.47
31	Shrub	MIBI3	5	15	0.00	20.00	8.67	8.38
32	Shrub	OPUNT	5	15	0.00	60.00	30.00	30.00
33	Shrub	PAIN2	10	26	0.00	1.00	0.33	0.47
34	Shrub	GUSA2	5	15	0.00	78.00	30.40	28.92
36	Tree	ACGR	5	15	0.00	12.00	5.50	5.12
36	Shrub	DAFO	5	15	0.00	1.00	0.25	0.43



Production Lbs/Acre Trends

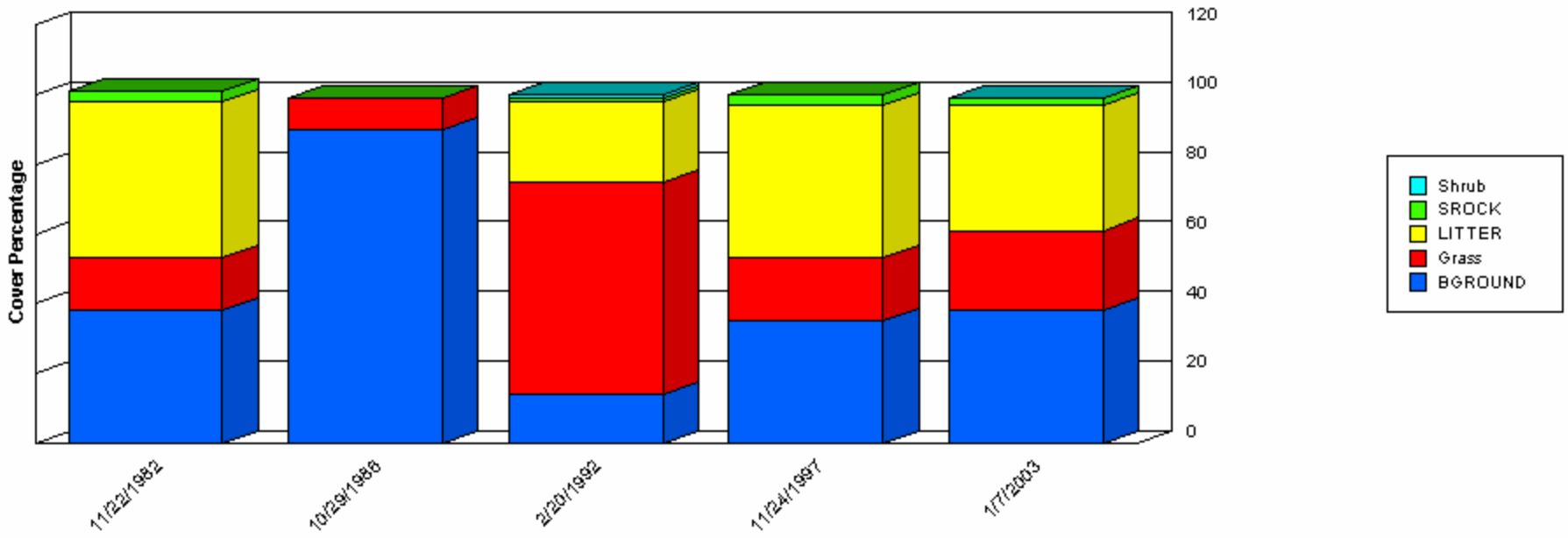


	10/29/1986	2/20/1992	11/24/1997	1/7/2003
Forb	**31.00**	**64.00**	**10.00**	**0.00**
Grass	**614.00**	**753.00**	**305.00**	**57.00**
Shrub	**15.00**	**84.00**	**164.00**	**0.00**
Tree	**13.00**	**0.00**	**0.00**	**1.00**
Total	**673.00**	**901.00**	**479.00**	**58.00**

Report Parameters

SITE NAME LIKE	64064-3-1-F221
ON/AFTER	01/01/1983
ON/BEFORE	12/31/2003

Ground Cover Trends



	11/22/1982	10/29/1986	2/20/1992	11/24/1997	1/7/2003
BGROUND	38.00	90.00	14.00	35.00	38.00
Grass	15.00	9.00	61.00	18.00	23.00
LITTER	45.00	0.00	23.00	44.00	36.00
Shrub	0.00	0.00	1.00	0.00	0.00
SROCK	3.00	0.00	1.00	3.00	2.00
Total	101.00	99.00	100.00	100.00	99.00

Report Parameters

SITE NAME LIKE	64064-3-2-F222
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003

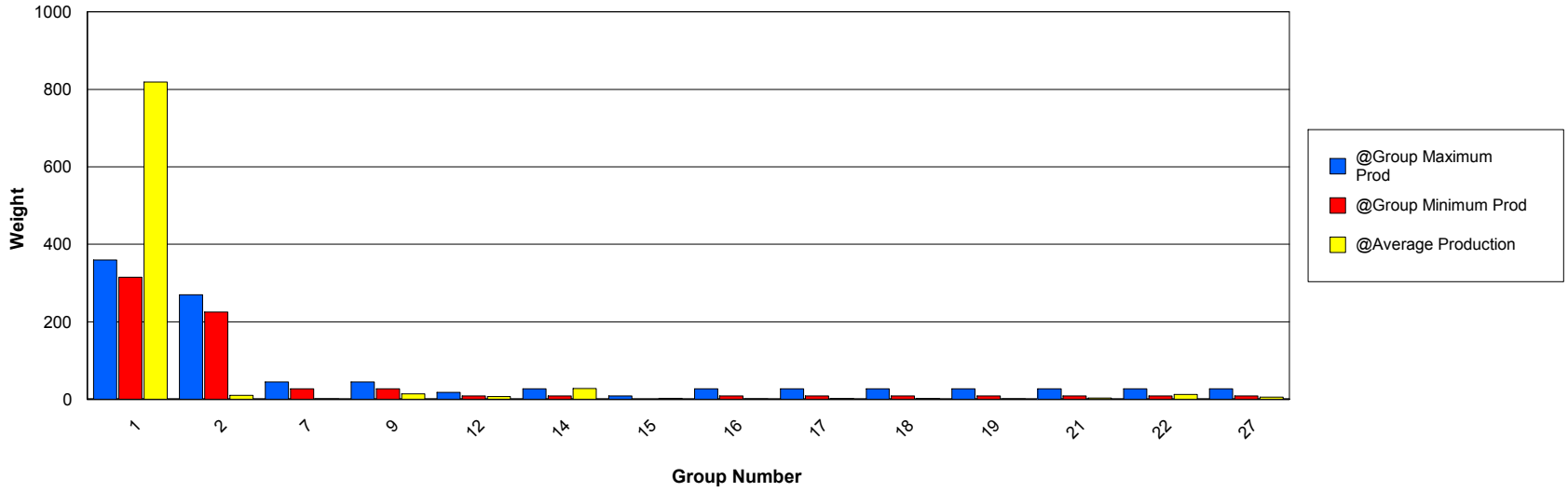
Functional / Structural Groups

Report Parameters

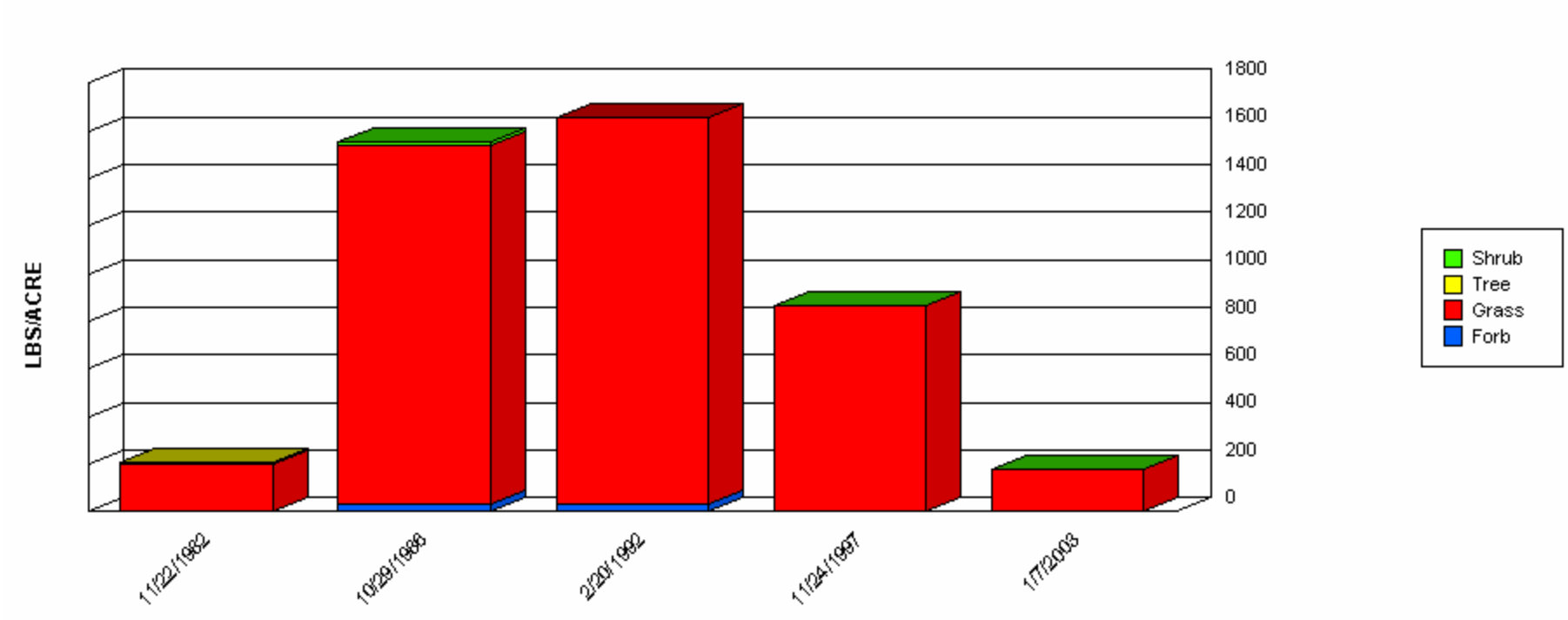
SITE NAME LIKE	64064-3-2-F222
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003
MIN LBS TO GRAPH	1
SELECTED ECOSITE	042CY007NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	HIMU2	315	360	154.00	1,477.00	743.40	517.89
1	Grass	SCBR2	315	360	7.00	277.00	75.60	102.76
2	Grass	BOER4	225	270	0.00	11.00	3.67	5.19
2	Grass	BOGR2	225	270	0.00	24.00	6.40	9.00
7	Grass	ARIST	27	45	0.00	3.00	1.25	1.30
9	Grass	MUAR	27	45	0.00	35.00	13.80	14.68
9	Grass	MUAR2	27	45	0.00	1.00	0.33	0.47
12	Grass	PAHA	9	18	0.00	14.00	7.20	4.62
14	Grass	TRMU	9	27	0.00	84.00	28.00	39.60
15	Grass	TRPI2	0	9	0.00	10.00	2.50	4.33
16	Grass	ERCI	9	27	0.00	4.00	1.00	1.55
17	Grass	ERPU8	9	27	0.00	2.00	0.75	0.83
17	Grass	LECO	9	27	0.00	2.00	1.00	1.00
18	Forb	SPHAE	9	27	0.00	5.00	1.80	1.94
19	Forb	CROTO	9	27	0.00	2.00	0.50	0.87
19	Forb	PENA	9	27	0.00	1.00	0.50	0.50
21	Forb	ERTE13	9	27	0.00	10.00	2.75	4.21
21	Forb	HOGL2	9	27	0.00	1.00	0.50	0.50
22	Forb	AAFF	9	27	0.00	14.00	3.40	5.35
22	Forb	XADR	9	27	0.00	26.00	8.67	12.26
22	Forb	ZINNI	9	27	0.00	1.00	0.33	0.47
24	Forb	EUPHO	9	27	0.00	0.00	0.00	0.00
26	Shrub	GUSA2	9	27	0.00	1.00	0.33	0.47
27	Tree	ACGR	9	27	0.00	3.00	0.75	1.30
27	Shrub	SELO3	9	27	0.00	14.00	4.67	6.60

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends



	11/22/1982	10/29/1986	2/20/1992	11/24/1997	1/7/2003
Forb	**2.00**	**34.00**	**35.00**	**5.00**	**0.00**
Grass	**201.00**	**1,503.00**	**1,621.00**	**864.00**	**180.00**
Shrub	**0.00**	**15.00**	**0.00**	**0.00**	**0.00**
Tree	**3.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**206.00**	**1,552.00**	**1,656.00**	**869.00**	**180.00**

Report Parameters

SITE NAME LIKE	64064-3-2-F222
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2003

NM060

Date Printed: 5/3/2004

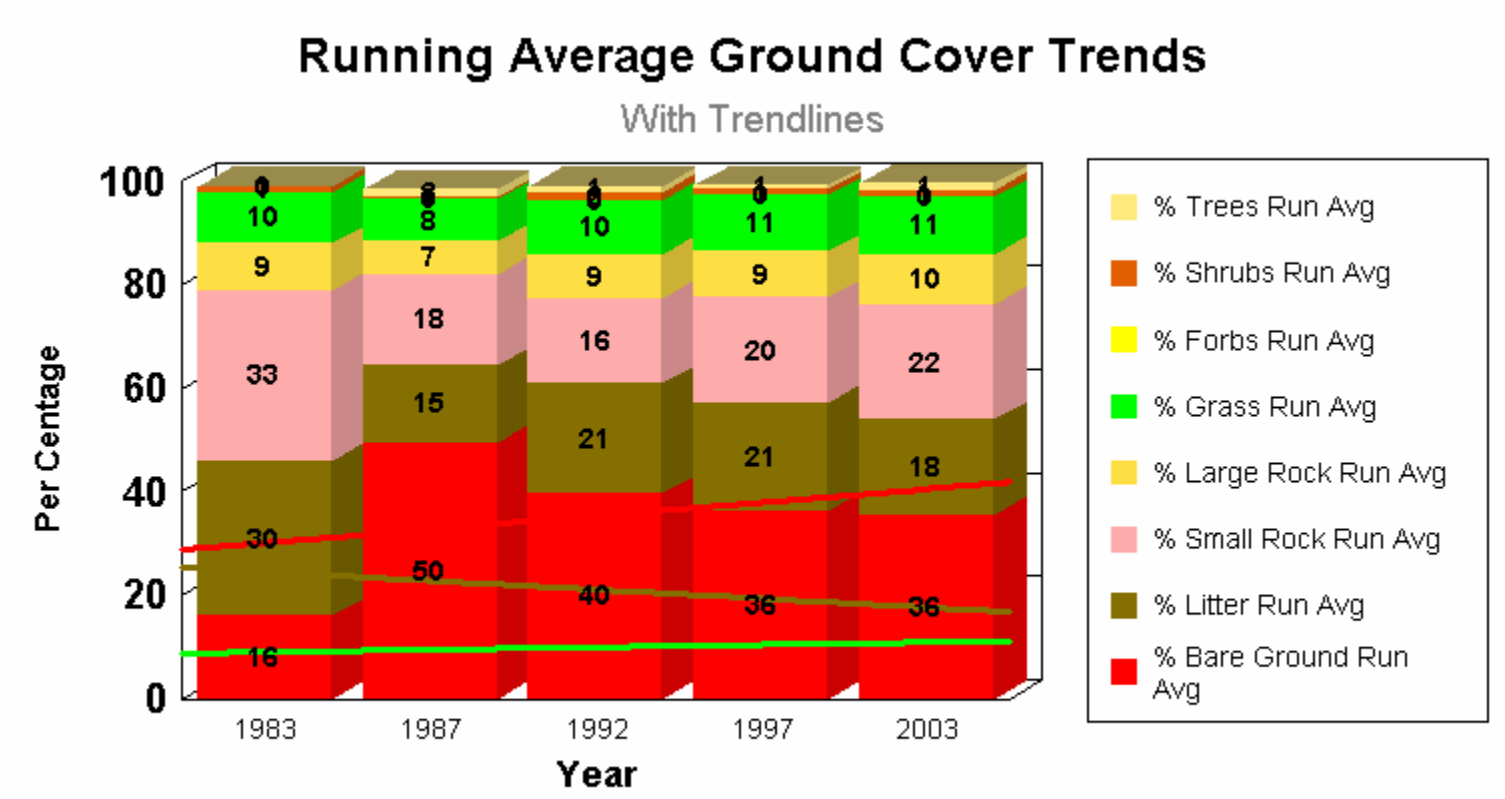
64064 BROWN BROTHERS 3-1

Vegid#: 963

64064-3-1-F221 Ecological Site No.: 042CY025NM

Location: Township: 0120S Range 0220E Section 27 QtrQtr: NWNW

Year	Bare Ground	Litter	Small Rock	Large Rock	Forbs	Grass	Shrubs	Trees	Running Average Bground	Running Average Litter	Running Average Srock	Running Average Lrock	Running Average Forb	Running Average Grass	Running Average Shrubs	Running Average Trees
1983	16.00	30.00	33.00	9.00		10.00	1.00	0.00	16.00	30.00	33.00	9.00		10.00	1.00	0.00
1987	83.00	0.00	2.00	4.00	0	6.00	0.00	3.00	49.50	15.00	17.50	6.50	0	8.00	0.50	1.50
1992	20.00	34.00	14.00	13.00		15.00	4.00	0.00	39.67	21.33	16.33	8.67	0	10.33	1.67	1.00
1997	26.00	20.00	32.00	10.00		12.00	0.00	0.00	36.25	21.00	20.25	9.00	0	10.75	1.25	0.75
2003	33.00	8.00	30.00	13.00		12.00	2.00	3.00	35.60	18.40	22.20	9.80	0	11.00	1.40	1.20



NM060

Date Printed: 5/3/2004

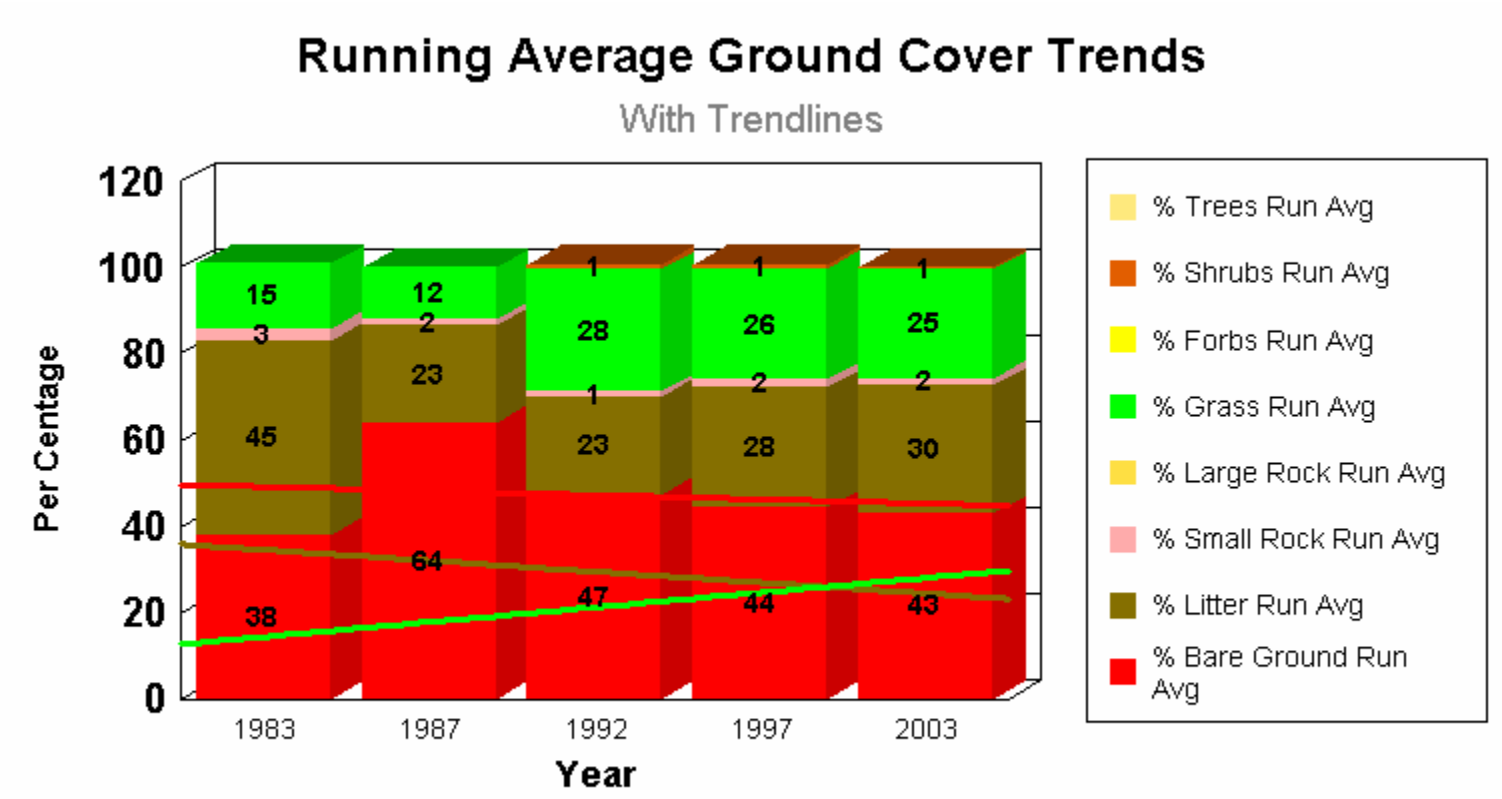
64064 BROWN BROTHERS 3-2

Vegid#: 964

64064-3-2-F222 Ecological Site No.: 042CY007NM

Location: Township: 0120S Range 0220E Section 35 QtrQtr: NWSW

Year	Bare Ground	Litter	Small Rock	Large Rock	Forbs	Grass	Shrubs	Trees	Running Average Bground	Running Average Litter	Running Average Srock	Running Average Lrock	Running Average Forb	Running Average Grass	Running Average Shrubs	Running Average Trees
1983	38.00	45.00	3.00			15.00			38.00	45.00	3.00			15.00		
1987	90.00	0.00	0.00			9.00			64.00	22.50	1.50			12.00		
1992	14.00	23.00	1.00			61.00	1.00		47.33	22.67	1.33			28.33	1.00	
1997	35.00	44.00	3.00			18.00			44.25	28.00	1.75			25.75	1.00	
2003	38.00	36.00	2.00			23.00	0.00		43.00	29.60	1.80			25.20	0.50	



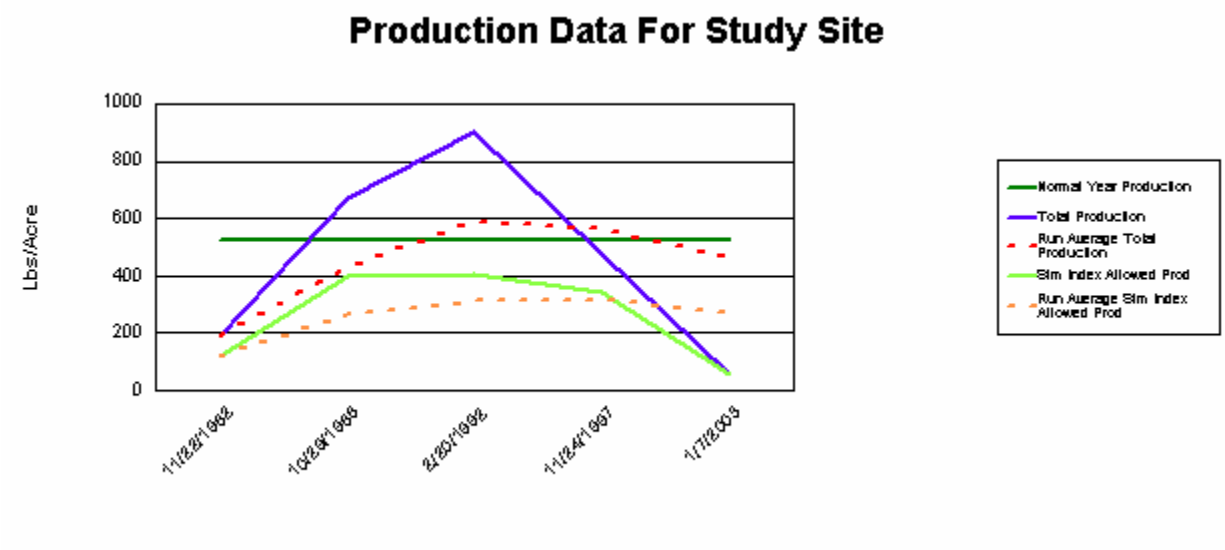
Production (lbs/ac) Data

VEGID: 963

64064 BROWN BROTHERS 64064-3-1-F221

SHALLOW SD-3 042CY025NM

Date	Range Cond.	Similarity Index	Normal Year Production	Total Production	Running Average Production	Sim Index Allowed Production	Running Average Sim Index Allowed Production
11/22/1982	45.39	22.67	525	187.00	187.00	119.00	119.00
10/29/1986	72.63	76.19	525	673.00	430.00	400.00	259.50
02/20/1992	68.00	77.57	525	901.00	587.00	407.25	308.75
11/24/1997	70.38	65.43	525	479.00	560.00	343.50	317.44
01/07/2003	57.24	11.05	525	58.00	459.60	58.00	265.55



Production (lbs/ac) Data

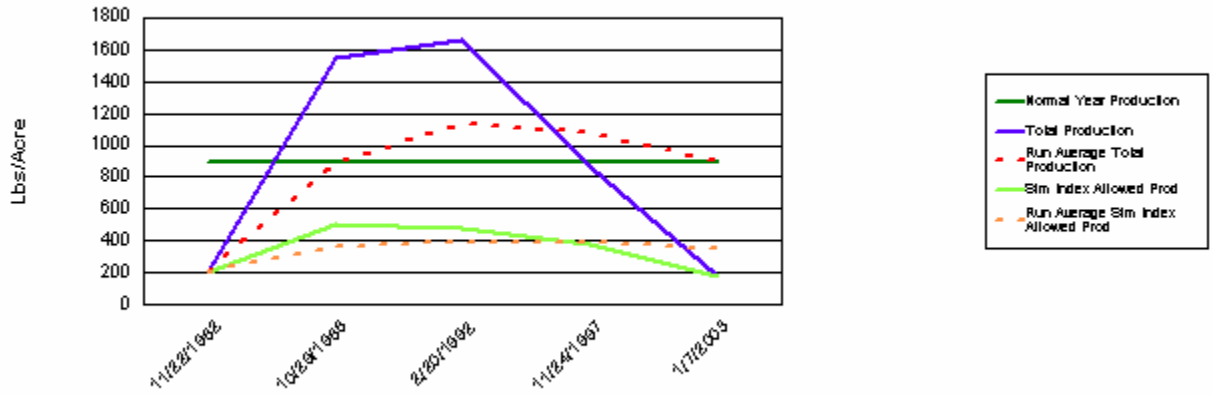
VEGID: 964

64064 BROWN BROTHERS 64064-3-2-F222

LOAMY SD-3 042CY007NM

Date	Range Cond.	Similarity Index	Normal Year Production	Total Production	Running Average Production	Sim Index Allowed Production	Running Average Sim Index Allowed Production
11/22/1982	49.82	22.78	900	206.00	206.00	205.00	205.00
10/29/1986	50.38	55.67	900	1,552.00	879.00	501.00	353.00
02/20/1992	46.00	52.78	900	1,656.00	1,138.00	475.00	393.67
11/24/1997	41.62	41.56	900	869.00	1,070.75	374.00	388.75
01/07/2003	43.51	20.00	900	180.00	892.60	180.00	347.00

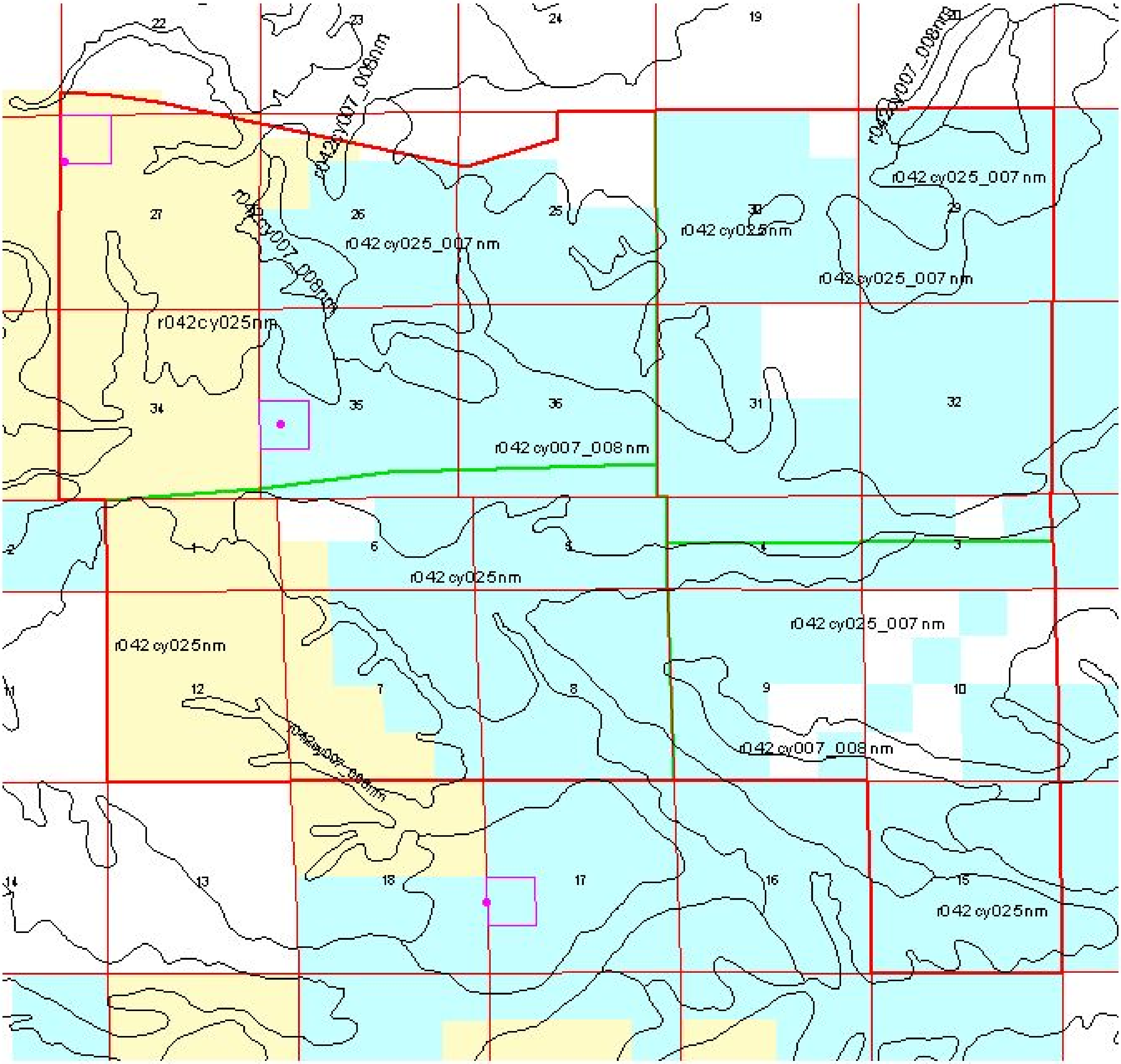
Production Data For Study Site



Rangeland Health Assessment
Ecological Sites

Allotment 64064

T12S.R22E



T13S.R23E

0.5 0 0.5 Miles

Public

Study Plots

State

Private

Study Locations

Pasture Boundary

Ecological Site Boundary

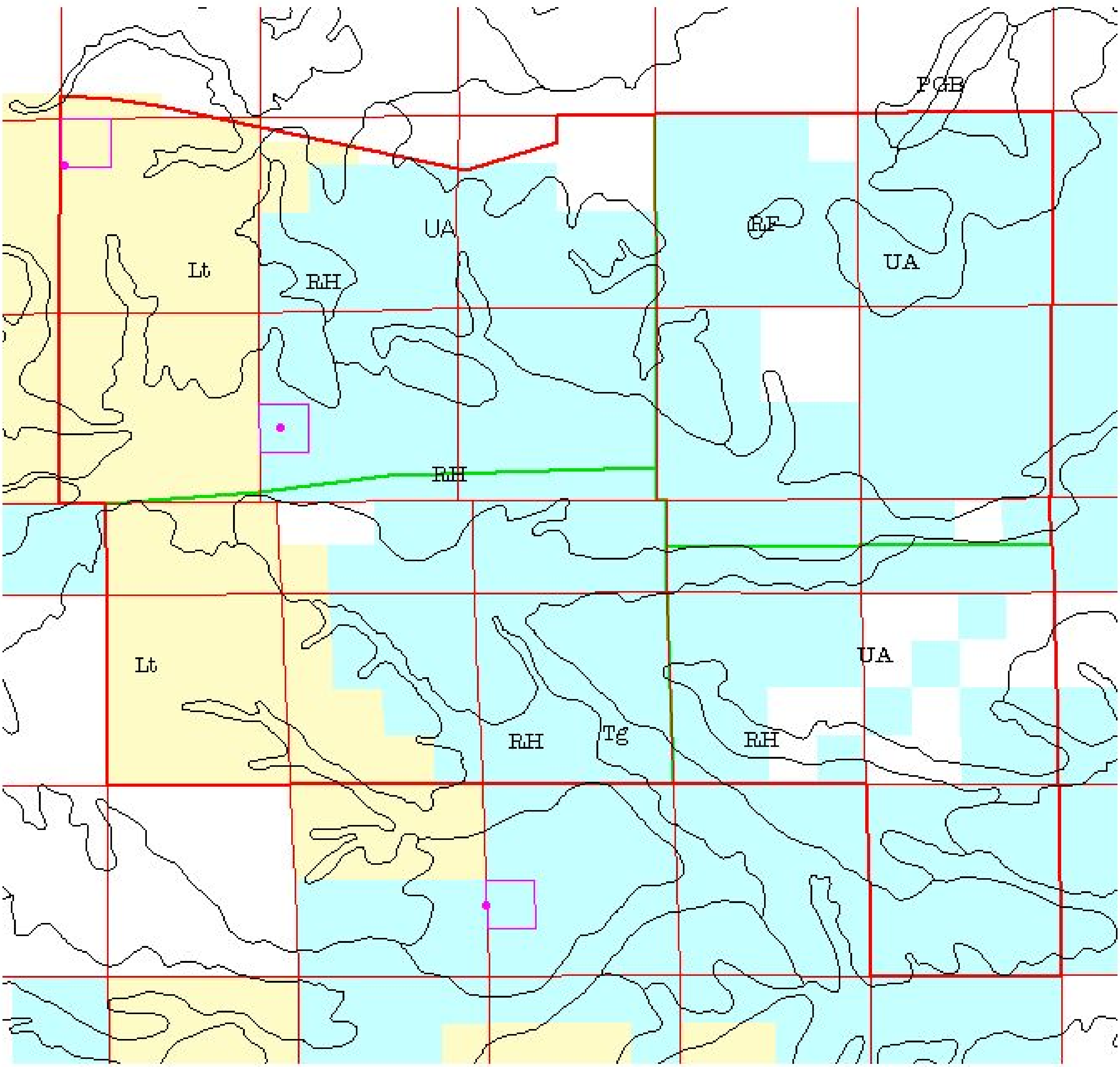
Allotment Boundary

Produced by the Roswell Field Office
GIS Intern on July 23, 2003.

Rangeland Health Assessment
Soil Mapping Units

Allotment 64064

T12S.R22E



T13S.R23E

0.5 0 0.5 Miles

Public

Study Plots

State

Private

Study Locations

Pasture Boundary

Soil Mapping Units

Allotment Boundary

Produced by the Roswell Field Office
GIS Intern on July 23, 2003.

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